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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,101	10/24/2001	Yaw S. Obeng	SILO-0005	8967
27964	7590	06/29/2004	EXAMINER	
HITT GAINES P.C. P.O. BOX 832570 RICHARDSON, TX 75083			OJINI, EZIAMARA ANTHONY	
			ART UNIT	PAPER NUMBER
			3723	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/000,101	<b>Applicant(s)</b> OBENG ET AL.	
	<b>Examiner</b> Anthony Ojini	<b>Art Unit</b> 3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8 and 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 28 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Applicant's cancellation of claims 7 and 9-27 in Paper No. 11 is acknowledged.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anjur et al. (6,117,000) in view of Molnar (6,390,890 B1).

**With respect to claims 1-4,6 and 28**, Anjur et al. disclose a polishing pad comprising a polishing body having polyurethane thermoplastic resin particles having Shore A hardness ranging between 55 to about 98 (see col. 7, lines 26-32). Anjur et al. also disclose in column 2, lines 6-12, a closed cells polymer foams.

Anjur et al. fail to disclose a cross-linked polymer having a hardness ranging from about 34 shore A to about 60 Shore A.

Molnar discloses a polishing pad comprising a cross-linked polyolefin polymer (26) having a shore A hardness (see col. 9, lines 11-23 & col. 15, lines 3- 51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the polishing pad of Anjur et al. to include a cross linked polymer in view of Molnar so as to enhanced thermal resistance.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide polishing pad of Anjur et al. with a cross-linked polymer having a hardness ranging from about 34 shore A to about 60 Shore A **so as to enhanced thermal resistance**, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

**With respect to claim 5**, Anjur et al. fail to show wherein a polishing body includes a base pad and a cross-linked polymer forms a polishing surface located over the base pad.

**Molnar** discloses a polishing material having a base pad (37) and elastomeric polymer (36) forms a polishing surface located over the base pad (see fig. 4).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide polishing pad of Anjur et al. with a polishing body that includes a base pad and elastomeric polymer polishing surface that is located over the base pad in view of Molnar so as to enhanced thermal resistance.

### ***Allowable Subject Matter***

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Amendment***

Applicant's arguments filed 4/16/04 have been fully considered but they are not persuasive.

**Applicant argues** that "the asserted combination of " U.S. Patent No. 6,117,00 to Anjur et al. and U.S. Patent No. 6,390,890 B1 to Molnar "fails to establish a prima facie case of obviousness for claims 1-6,8". However, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Anjur et al. disclose the concept of a polishing pad comprising a polishing body having polyurethane thermoplastic resin particles having Shore A hardness ranging between 55 to about 98; and a closed cells polymer foams but fail to disclose a cross-linked polymer having a hardness ranging from about 34 shore A to about 60 Shore A. Molnar discloses a polishing pad comprising a cross-linked polyolefin polymer (26) having a shore A hardness. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the polishing pad of Anjur et al. to include a cross linked polymer in view of Molnar **so as to enhanced thermal resistance**. It would have further been obvious to one having ordinary skill in the art at the time the invention was

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made to provide polishing pad of Anjur et al. with a cross-linked polymer having a hardness ranging from about 34 shore A to about 60 Shore A, **so as to enhanced thermal resistance**, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

**Applicant argues** that “the combination of Anjur and Molnar fails to teach or suggest across-linked polymers of having a hardness ranging from about 34 shore A to about 60 Shore A”. However, Molnar discloses the concept of cross-linked polymers of having any utility as polishing pad. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the polishing pad of Anjur et al. to include a cross linked polymer in view of Molnar so as to enhanced thermal resistance.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide polishing pad of Anjur et al. with a cross-linked polymer having a hardness ranging from about 34 shore A to about 60 Shore A **so as to enhanced thermal resistance**, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

**Applicant argues** that “in the applicant’s declaration, filed with the present response under 37 C.F.R 1.132 (‘Obeng Declaration”), polyurethane-based polishing pads are well known to decompose during CMP. Consequently, the hardness of polyurethane-based polishing pads does not remain constant

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during polishing. It follows that Anjur's range of 55 Shore A to 98 Shore A, for newly made polyurethane-based polishing pads will bear little to no resemblance to the hardness of the pad during polishing". However, The Declaration under 37 CFR 1.132 filed April 16, 2004 is insufficient to overcome the rejection of claim 1 based upon Anjur et al. (6,117,000) in view of Molnar (6,390,890 B1) because: Applicant fails to teach how hardness of polyurethane-based polishing pads does remain constant during polishing that will not bear little to no resemblance to the hardness of the pad during polishing.

It states that the claimed subject matter solved a problem that was long standing in the art. However, there is no showing that others of ordinary skill in the art were working on the problem and if so, for how long. In addition, there is no evidence that if persons skilled in the art who were presumably working on the problem knew of the teachings of the above cited references, they would still be unable to solve the problem. See MPEP § 716.04.

**Applicant argues** that "Molnar provides no teaching or suggestion of the use of cross-linked polymer having a closed cell structure. Therefore the combination of Anjur in view of Molnar fails to teach or suggest the elements of claims 3,6", as well as each element of claim 1". However, Molnar discloses the concept of cross-linked polyurethane thermoplastic (a form of polyethylene) that a closed cells polymer foams.

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***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dau et al., Berger et al., Sevilla et al. (6,062,968), Sevilla et al. (6,126,532) disclose a polishing pad having polymer layer surface respectively.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Ojini whose telephone number is 703 305 3768. The examiner can normally be reached on 7.30 to 5.00 Tuesday-Friday with every other Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 703 308 2687. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308 3590 for regular communications and 703 746 3277 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 1148.

A handwritten signature in black ink, appearing to read "Joseph J. Hail, III". The signature is fluid and cursive, with the last name "Hail" being more prominent.

Joseph J. Hail, III  
Supervisory Patent Examiner  
Technology Center 3700

AO  
June 14, 2004